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CONTACT DUPLICATING AND RESEAU PRINTER
AND

HIGH RESOLUTION STEP AND REPEAT PRINTER

THIRTY-SECOND MONTHLY LETTER REPORT
March 10, 1967

Period: February 1, 1967 to February 28, 1967

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### 1.0 CONTACT DUPLICATING AND RESEAU PRINTER

#### 1.1 Purpose

The overall objective of the current contract is the design, fabrication, test and delivery of a photographic step and repeat Contact Duplicating and Reseau Printer. Prime design goals are high-speed automatic operation, variable format capability, and high resolution with minimum film distortion or damage. The delivered equipment will be suitable for operational use. The printer will accommodate films of 70mm to  $9\frac{1}{2}$ " width with frame lengths up to 30 inches and will provide operation in the Reseau mode and selective mode as options.

### 1.2 Activity of this Report Period

The Film Metering Mechanism has been completely installed, wired and harnessed. Preliminary tests show a high degree of repetitive accuracy at any frame length setting. The Raw Stock Metering Mechanism and Upper Drawer interference have been repaired.

Distortion of the film during the print cycle has been alleviated by introduction of a Mylar interface between the air-bag and the duplicating film. Precision measurements of a limited number of sample prints show no measurable distortion of Reseau lines. A number of current experiments are directed toward finding the cause and remedy for occasional patterning during the automatic exposure cycle. Energy output of the 96 exposure lamps has been balanced such that manually-timed exposures thru a neutral density filter produce essentially uniform density over the area of the printing platen.

The Pre-View & Punch Station has been reworked for greater punching accuracy and now employs a two scope system for precise alignments with the Reseau line.

## 1.3 Plans for Next Report Period

The Film Metering Mechanism will be extensively tested for accuracy and reliability, as will the Raw Stock Metering Mechanism.

The Mylar interface will be permanently secured within the Printer and further tests run to prove resolution and lack of film distortion.

Further tests are planned to improve repeatable performance of the lamp/photocell circuitry and to rebalance circuits, if necessary.

Complete Test Procedures are planned for the latter part of the coming report period prior to final demonstration. Updating and rework of the Operations Manual is being reviewed.

A meeting with the program monitors is planned for February 28 to review Printer progress, and on March 1 to inspect and test the reworked Pre-View & Punch Station.

### 1.4 Problems

Analysis of the test roll of prints furnished by the customer shows repeated and consistent patterning in approximately five areas in a 9 x 30" print. The corresponding lamp/photocell circuits have been identified and are being closely examined to determine the cause of non-uniform behavior.

## 1.5 Documentation

None

# 1.6 Questions Outstanding

None

# 2.0 HIGH RESOLUTION STEP AND REPEAT PRINTER

## 2.1 Purpose

The purpose of this effort is to design, fabricate, test and deliver in twenty months a high precision

step and repeat, photographic contact printer. This printer will be capable of producing photographic contact prints of the highest possible quality, resolution, and acutance from roll film of widths varying from 70mm to  $9\frac{1}{2}$ " and in preselected frame lengths from 5 inches up to a maximum of 30 inches.

# 2.2 Activity of this Report Period

There was no activity this month. The Stop-Work period expired 11 January 66. still awaiting Government direction.

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